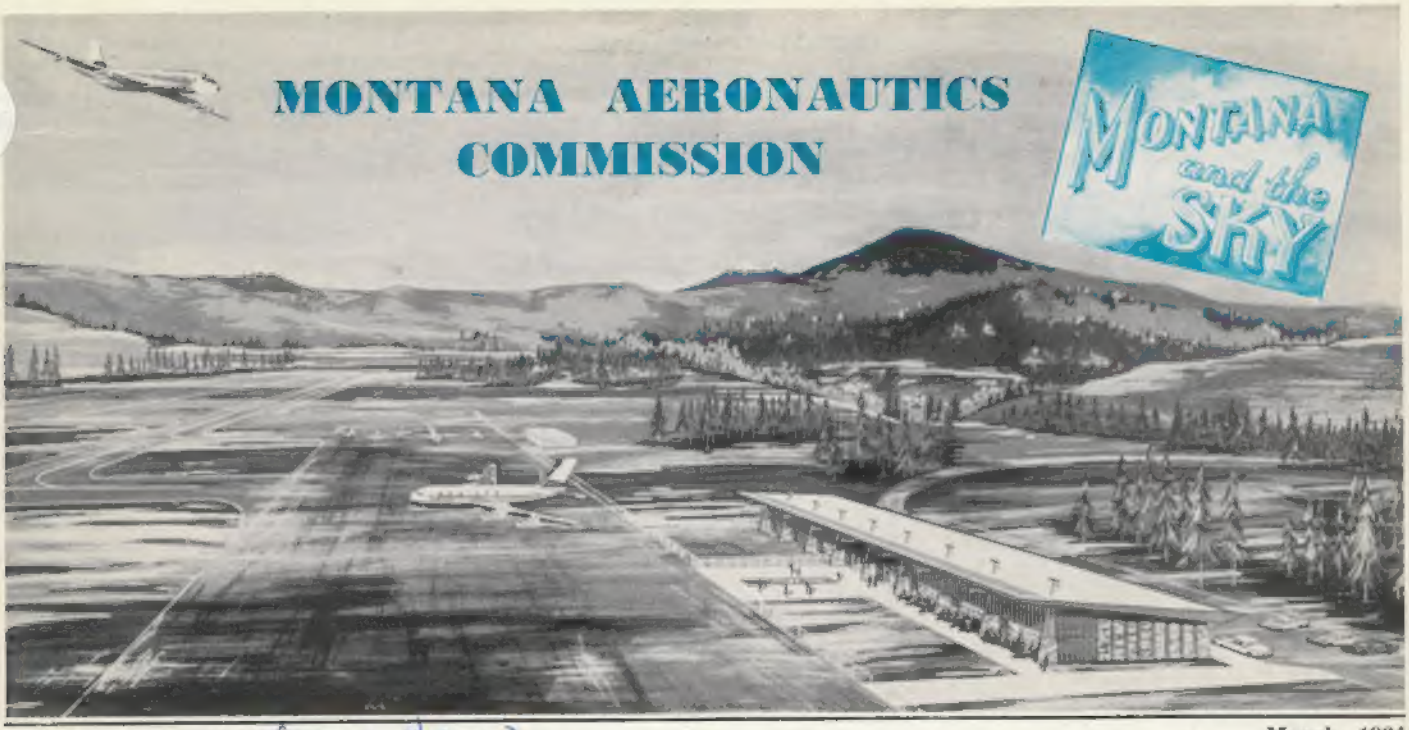
MONTANA AERONAUTICS COMMISSION



Volume 14, No. 12 (Vol. 15 No. 2) March, 1964

Successful Montana-Idaho ATA Joint Convention Elects Officers

A real fine turn-out, well conducted nformative meetings; a talented group of speakers, and excellent accommodations added up to a SUCCESSFUL convention for the Idaho and Montana Aviation Trades Association, held February 20, through the 22nd, in Idaho Falls, Idaho.

Out-going Presidents Jack Hughes, Montana, and Bob H. Fogg, Idaho, held the reins on Friday and early Saturday with the new officers taking over the gavels on Saturday afternoon.

New officers elected for Montana were: John O. Nordhagen, President; Jack Archibald, Vice President; Jeff Morrison, Secretary-Treasurer.

Board Members: Walter Hensley, Hensley Flying Service, Havre; Homer Holman, Skyways Flying Service, Inc., Great Falls; Jack Hughes, Johnson Flying Service, Missoula (out-going president).

Holdover Board Members: Ed Obie, Obie's Flying Service in Chinook.

Elizabeth "Bitty" Herrin was reappointed Montana's Executive Secretary.

Mr. Jerry Wilson becomes Idaho's new President for the 1964-65 term.

Registration and Directors meeting [illegible] held on Thursday and the main convention sessions opened on Friday morning. Reports on various meetings and conventions were given by the Idaho and Montana representatives during the morning.

The speaker for the noon luncheon was Mr. Stuart W. Turner, Consulting Agrologist from San Francisco, California, with Councilman Gordon Nelson of Idaho Falls acting as Toastmaster.

Friday afternoon meetings were presided over by Mr. Nordhagen with Mr. Monte Pierce, Chief Air Officer, USFA, Washington, D. C. and Mr. James W. Franks, Protection Specialist, USBLM, Washington, D. C. presenting the afternoon program, followed by a panel of agricultural specialists from Montana and Idaho.

Friday's banquet was MC'd by the Honorable A. B. Eckersell, Mayor of Rigby, Idaho and Mr. R. V. Reynolds, Deputy Assistant Administrator of the Federal Aviation Agency Office of General Aviation Affairs, Washington, D. C. gave the main address.

Saturday morning the state groups held their separate elections.

Luncheon on Saturday—Mr. Kenneth L. Cunnington, Idaho Falls, Chamber of Commerce was Toastmaster, with the Directors of Aeronautics giving their "Reports on the Future":—Mr. Chet Moulton—Idaho; Mr. Charles A. Lynch, Montana and Mr. Harlon W. Bement, Utah. An insurance session was held Saturday afternoon, followed by a panel of distributors on "What's New With You."

At Saturday night's no host banquet, Mr. Donald Pieper, Idaho State Representative was Master of Ceremonies and Mr. Joseph H. Tippetts, Regional Director for the Federal Aviation Agency Western District, Los Angeles, was the featured speaker.

Presentations of the Eastern Idaho "Safe Pilot Award" for 1963, were made by Chet Moulton and his staff.

FIRC NO. 3 UNDERWAY IN GREAT FALLS

Twenty applicants chosen by a Selection Board of the MATA began classes on March 2nd in the O'Haire Manor in Great Falls for the Third Flight Instructors Refresher Course. Mr. Jack Wilson, Safety and Education Officer for the Montana Aeronautics Commission, is Course Manager, and Homer Holman, Skyways Flying Service, Great Falls, is MATA Co-ordinator. The majority of the Instructors, specialists from the Weather Bureau and the Federal Aviation Agency, are participating for their Second or Third year, however, there were a few new faces

(Continued on Page 4, Col. 1)

Official Monthly Publication
of the
MONTANA AERONAUTICS COMMISSION

Box 1698
Helena, Montana

Tim Babcock, Governor

Charles A. Lynch, Director

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DIRECTOR'S COLUMN

IN MEMORIUM

ARTHUR W. SOARE

Glendive Flying Service
Glendive, Montana
1913 - 1964

At this time of the tragic loss of a long-time aviation supporter and friend to so many Montanans, I feel that mention should be made of the complete cooperation of the Operators, Pilots, Observers, Organizations and Individuals that gave their whole-hearted effort during the search for Art's downed aircraft. Fifty-two aircraft from Glasgow, Miles City, Forsyth, Hardin, Billings and Helena, participated, flying a total of 298 hours.

A special note of thanks goes to the Miles City MPA Hangar for providing food supplied by a catering service, to all pilots and their observers in the Miles City area.

Unregistered Pilots—Note

As the 1964 addressograph mailing list has not yet been completed, you may still be placed on the mailing list if you register no later than the 31st of March.

However, **Registration** is overdue . . . **REGISTER TODAY!**

Twenty years ago, lots of people dreamed of earning the salary they can't get along on today.

LETTERS TO THE DIRECTOR

Dear Mr. Lynch:

We have heard from various sources that the FAA plans to build around a "hard core" network of approximately ninety manned Flight Service Stations with the balance to be either closed completely or remoted. The present domestic system comprises approximately 290 stations so they are talking about closing or remoting about 200 stations. This statement is more than hearsay because the transcript of the hearings on the FAA F. Y. 1964 appropriations bill held by both the House and the Senate subcommittee and the remarks of the chairman support this claim by recommending a possible closing of fifty stations. The personnel and funds would then be used to strengthen air traffic control which does not service General Aviation as a whole but is a regulatory system that services only about 20% of the General Aviation population. For your information and possible use in discussing this matter, I would like to point out some of the flaws in this concept of FSS planning.

A.) A "hard core" system of ninety stations will provide only about 30% VHF/DF coverage. In Montana, which at the present time is inadequately covered, this would seriously handicap the future of aviation and present a serious safety problem in cross country flying and weather and terrain briefing. The VHF/DF program involving approximately 300 units, if properly distributed, will provide the most valuable single safety service to General Aviation. The program, ten years in the making, has been approved by the Budget Bureau and Congress and the units are rolling off the assembly line. A VHF/DF installation will cover a service area of about 125 miles (65 miles radius). The cost of remoting the output of the DF unit, together with the necessary controls, to an operating position an appreciable distance away would be prohibitive. There is no economy in such a situation. Another point in this connection is that VHF/DF service is not as critical in the "Hub" area (where the "hard core" stations would be located) as it is in the more isolated locations where there are not radar or military DF facilities to bring into play in emergencies. Consider the possibility that Lewistown, Havre, Glasgow, and Cut Bank be remoted to Great Falls leaving the whole northeastern area of Montana without VHF/DF facilities.

B.) There is a limit to the number of VOR's, remote communication outlets, and interphone lines that can be efficiently operated from a single location. The writer has found during his cross country flying that the poorest service comes from the larger stations who are too busy to give adequate briefing.

C.) Much of the over-the-counter briefing would no longer be available to pilots. Good pilot briefing includes not only a pictorial presentation of the weather, assistance with route planning, briefing on terrain features, etc. but frequently includes valuable tips on the operating characteristics of the particular aircraft in the existing environment. There is also the public relations value of making the Flight Service Station the front door of the FAA. Conducting of airmen written examinations by FSS personnel is just one such subsidiary service.

D.) Familiarity with the terrain features in a station's flight service area is a very important factor in furnishing emergency assistance to pilots in trouble. Where extensive areas are made the responsibility of a single large station the personnel must attempt to familiarize themselves with all of the area since they must operate from any position through any of the communication outlets. The result is a less efficient service. Observed weather data by Cut Bank Flight Service Station pertaining to the mountain terrain to the west could be many times more valuable than the "guess" Great Falls might make on these same conditions.

E.) The weather observing and reporting activities at an average seven-man Flight Service Station comprise not over twenty percent of his total workload. This is merely an adjunct to his primary duties which costs the taxpayer nothing extra. If a five man weather bureau staff is installed to supplant the FSS staff the cost of the Weather Bureau payroll, the now-recurring costs of moving the FAA out and moving the Weather Bureau in, the cost of the additional landlines, etc., would make the venture uneconomical. It therefore follows that if there is a need f

aviation weather at a location the most efficient means of providing it is by retaining the Flight Service Station.

We can see no real economy in tearing down a system that is already established and remoting it at a cost close to its original construction cost with a resulting loss of service. We sincerely hope that you and your staff will investigate this matter thoroughly and use every effort to stop such a useless waste of funds. We do not say that the existing Flight Service Station System is entirely satisfactory. No doubt, there are a few stations that could be remoted or relocated to give better coverage and service.

Thank you for your time and consideration.

Yours sincerely,
Wm. R. Chambers, Manager
Cut Bank Airport

Helena Senior High School Graduates 10 from Helena Airframe-Powerplant Courses

Word has been received from Mr. Giles Russell, Principal of the Department of Aeronautics and Related Trades of the Helena Senior High School that ten young men have graduated from the Airframes and/or Powerplants Courses, and have secured licenses with the FAA during the past semester.

For the following three graduates it means the completion of school training and they have received both Airframes and Powerplants licenses; **John Bakken,** who will be employed by the Idaho Aviation Center in Idaho Falls; **Ronald Patzer** who will go into the military service; and **William Dunlop.** Dunlop has completed his training for both licenses but was called into the military service before he could complete his practical.

The six graduates receiving their FAA Powerplants licenses and will remain in training to complete the work for their second licenses, are **Keith Wilhelm, Larry Lorz, James Darcy, Joe Metually, Kenneth Wendland,** and **Phillip Huebner. Edward Allison** who secured his Airframes license last June will add the Powerplants license this month.

DO remember that "sucker holes" are always present to tempt the inexperienced pilot.

KNOW YOUR COMMISSION

JERRY AT HIS FILM TABLE

GERALD C. BURROWS

Shortly after Gerald C. "Jerry" Burrows was born in Minneapolis, Minnesota his family moved west to Idaho. Jerry attended grade and high school in Boise, he then continued his education at Eastern Montana College of Education in Billings, Montana.

Jerry served two years in the United States Army, taking his training at Fort Ord, California and spending 1½ years in Germany with the 10th Infantry Division. After returning from the service he was employed, first by the Beatrice Foods Company, and then for the Continental Refinery in Billings. In June of 1961 he joined the staff of the Montana Aeronautics Commission.

Jerry has a three-fold position with the Commission:

Number 1—Film Clerk—This is a detailed job that involves many hours per week to keep current of the increasing orders for films, their repair and the ordering of new films. Jerry has compiled a complete brochure on the film that are available to the schools around the state, aviation organizations and interested persons.

Second—Unicom Service Manager—Jerry is responsible for the licensing, installation, delivery and the maintenance of all Unicoms in the MAC Unicom program.

Third—General Plant Maintenance Manager—This is a job that demands constant surveillance of the condition of the building and all commission vehicles.

Jerry's hobby of photography has also made him a number 1 photographer for MAC.

The Burrows are avid square-dancing enthusiasts and Jerry is active in the International Toastmaster's Club. All-in-all, Jerry is kept real busy!

Jerry and his wife Sharon recently purchased their home at 19 South Benton and reside with their daughter Kara Lynne, age 2 yrs., and young son Vincent, age 10 months.

(PLEASE NOTE: OUT-OF-STATE READERS: Jerry is sporting his "mutton-chop" beard in the spirit of Montana's Centennial Year.)

WANTED TO BUY: Low time Luscombe 8E or Cessna 140-electrical system, VHF—all metal — full instrumentation — clean and bright—with realistic price. Contact: Royal Turley, Three Forks, Montana. Phone 285-3510.

WANTED TO BUY: A 1956 or later Cessna 180 or 182. Please give all information first letter. Contact: Wayne Edsall, 718 North 17th, Bozeman, Montana. Phone 587-7635.

An operator sought to borrow $100,000 from the bank. "That's a lot of money," said the bank president. "Can you give me a statement?"

"Yes," said the operator. "I'm optimistic!"

AIR TRAFFIC — A concentration of numerous aircraft over a given point, each demanding the same route and altitude and each having special priority.

FIRC No. 3 Underway . . .

(Continued from Page 1)

among the instructors as classes began on Monday.

AIR TRAFFIC CONTROL

Loren Foot—Great Falls—3rd year
Lee Ward—Great Falls—3rd year
Glenn Kittelson — 1st year
Bernard Majerus — 1st year

R. Neal Whitten, General Aviation Operations Specialist Instructor, FAA Academy.

WEATHER BUREAU

Arthur Jacobson — 3rd year
Harry Elser—Great Falls—3rd year
Roy Arbaughman—Helena—1st year
Arthur Rozett — Great Falls — 3rd year

Warren Harding—Great Falls—1st year (Warren previously participated as Flight Line Briefer)

FAA ACADEMY

Richard J. "Dick" Munroe — Psychology of Training—3rd year

Samuel A. Lewis—Instruments—3rd year

R. Neal Whitten—Flight Maneuvers—1st year.

FLIGHT PORTION

Mr. Fritz Lueneburg and Mr. Arthur Kurth are the Flight Advisors for the Flight portion of the course, assisted by nine graduates of the previous courses.

Flight Instructors	FIRC Graduate Year
Alfred Hardy	'63
James W. Kruger	'62
Al Newby	'63
David Stradley	'62
Robert H. Lohof	'62
Monte E. McCann	'62
Paul Tilleman	'62
Jack Archibald	'62
Bruce Toole	'63

MONTANA WIND

By R. A. Dightman
Meteorologist In Charge
WBAS — Helena

People ordinarily spend only a few years in the Northern Rockies before they develop a feeling that spring weather is usually windy, particularly if they are engaged in outdoor activities such as farming, flying, fishing, etc. They are right; spring is by a wide margin the windiest season of an average Montana year—and of most non-average years, too! Over the years March, April and May produce more wind movement than any other three months, everywhere except in the "Chinook" belt from Shelby-Cut Bank southeastward to Livingston-Billings where winter is windier; **but** spring is windy there, too.

Probably no outdoor activity has more natural interest in this seasonal peak of wind movement than aviation: wind is of great importance in all flight planning. The author has overheard many pilots discussing and wondering about the "why" of this turbulent springtime wind condition, and this short article is an attempt to explain the phenomenon in terms of the general circulation of the atmosphere near the surface in the Northern Hemisphere.

At Winter's end (about March 21) the sun is nearly overhead at the equator, and begins to make its first appearance in the Arctic regions bringing an end to the long winter night. As the season progresses, the sun appears farther northward and days become progressively longer until about June 21, noted as the longest day of the year, and time of the midnite sun in the Arctic.

Warming of the Arctic regions proceeds quite slowly during March, April and May since there is still much more darkness than daylight, while warming of the southern United States proceeds very rapidly during this same period. So, while the Arctic temperatures remain very cold, the southern U. S. becomes very warm, establishing a strong temperature contrast (or gradient) between the two. Other, things being equal, winds will be strongest where the temperature gradients are largest, and the gradient becomes strongest across the northern Rockies (and Montana(during March through May each year. Therefore, strong winds are to be expected during those months. During the summer, while days are longer than nights in the Arctic, warming of those regions proceeds quite rapidly, while in the southern U. S., the rate of warming has levelled off, and as a result the temperature gradient between the two areas diminishes to a minimum, and winds decrease accordingly.

Why, as the Arctic cools off more rapidly than southern areas in late summer and fall, does not a similar wind pattern exist? It does, but often this temperature-induced wind reaches the surface for only a short time, because the surface layers of air cool through radiation, and provide a "cushion" with the wind blowing only above the surface layers of cool air. This seasonal wind does reach the surface at times during the fall, but not as often as during the spring. In general, strongest winds occur in regions of greatest temperature gradient.

The strongest hemispheric circulation occurs when the differences between Arctic cold and Tropical warmth are largest. And we can be sure that winds will be strong at times as long as the Arctic is much colder than lower latitudes.

HAVE YOU READ?

Kermit Anderson's feature story in the March issue of Flying Magazine titled **"Flying the Montana Missile Line."** Kermit's article tells of the way the transportation problems were solved by Severson Air Activities pilots to cover the thousands of miles in the surveying, delivery, and daily inspection flights to the almost inaccessible missile sites. We certainly wish to offer our congratulations to Kermit on his excellent story! Don't miss it!

* * *

"From Jenny to Jet" written by Don C. Wigton and published by Floyd Clymer is a book packed with historical and factual information, and pictures of the world's great airlines and contains biographies of the individuals who helped in getting each of the major airlines developed. Wigton captures the highlights of the tremendous development of airline transportation. This book could be used as a reference manual for students or historians. Available from Don C. Wigton, 1379 W. Winchester, Detroit 3, Michigan. Price $4.0(

AIRPORT NOTES

By James H. Monger
Assistant Director, Airports

Ekalaka—Bids will be opened for the construction of a new General Aviation Utility Airport for Ekalaka on March 18th, at 10:00 A.M. at the Capitol Building in Helena. All parties interested in bidding on this job should have a State Class "C" Contractor's License, which can be obtained from the Board of Equalization at the Capitol. This airport development is sponsored by Carter County, and will consist of a stabilized turf runway and parking area along with a perimeter fence and a segmented circle, windcone, and runway markers. Total estimated costs are approximately $20,000.00. Construction will start in April, and the project will be completed by June 1, 1964.

Richey—A new General Aviation Utility Airport has been approved for Richey. This project was requested by Dawson County, and approved by the Montana Aeronautics Commission at their February meeting. The VFR airport will consist of a single stabilized turf runway and will be located approximately 1 mile southwest of Richey.

Helena Office Building—The Joint City-County Airport Board of Helena recently awarded a contract to Waddell Construction Company of Helena to build an FAA office building to be located on the Helena Airport. Total cost of this building will be approximately $85,000.00 and is being financed by a ten year loan from the Montana Aeronautics Commission. The building will provide offices for the Federal Aviation Agency, District Airport Engineer, the Systems Maintenance Section of the FAA, and the GADO offices. Construction will be completed by September 1, 1964.

Morgan Border Crossing — The Malta Chamber of Commerce is now n the planning stages of promoting and developing a Border Crossing airstrip north of Malta on the Montana-Saskatchewan line at the Station of Morgan-Monchy. This border crossing airstrip will be for public useage, and will be adjacent to both Canadian and American custom houses. The Malta Chamber of Commerce plans on constructing this airstrip to the standards set forth by the Montana Aeronautics Commission, and they will utilize volunteer men, fuel and equipment on this project.

West Yellowstone Terminal Building—Bids were opened in Helena on February 19th, for the construction of the Terminal and Maintenance Buildings for the Yellowstone State Airport. Low bidders are as follows:

General Contract — Wallace Diteman, Bozeman, $158,768.00.

Mechanical Contract — Fullerton Plumbing, Hamilton, $18,900.00.

Electrical Contract—Bozeman Electric, Bozeman, $16,160.00.

Well Drilling Contract—Van Dyken Drilling Company, Bozeman, $1,-789.25.

Total Building Construction Contracts $195,617.25.

Engineering and architectural fee, Wenzel & Co., Great Falls, $19,463.91.

This makes a grand total of $215,-081.16.

Construction is expected to commence as soon as weather permits, and the completion date of the buildings will be April 15, 1965, or just in time for the 1965 tourist season. The airport is now 50% completed and will be usable by October 1, 1964. The funds for the Yellowstone State project have been provided by the National Park Service and the Federal Aviation Agency. The Montana Aeronautics Commission is sponsor of the project.

Federal Aviation Agency Exam-O-Gram No. 17 Common Misconceptions

The following remarks are actual excerpts from a pilot's written report of an accident in which he was involved.

"I was climbing at an airspeed of 60 mph. I started a climbing turn to the right. The wind now became a cross wind instead of a head wind. This (lack of head wind) caused the airplane to stall—to recover from the stall I turned the airplane back into the wind . . . (Later) I was in a quartering tailwind from the right . . . Went into a second stall . . . This is all I remember."

This pilot had over 100 hours, yet stalled and crashed due to an apparent misuse of controls at a slow airspeed. The inspector who took this pilot's statement decided to pursue this theory with a group of student pilots. He posed this question to them.

"If the aircraft's stalling speed was 60 mph and you were flying at an airspeed of 70 mph into a 30 mph wind, what would happen if you maintained this airspeed of 70 mph but turned downwind?" **Five of the six students said the airplane would stall.**

IS THIS ANSWER CORRECT? **No.**

IS THE STALLING SPEED OF AN AIRPLANE A FUNCTION OF THE AIRSPEED OR THE GROUND SPEED? **The airspeed.**

DOES THE DIRECTION OF THE WIND HAVE ANY EFFECT ON THE AIRSPEED OF AN AIRCRAFT IN FLIGHT? **No.**

Now to summarize our point, airspeed is the only speed which holds any significance for an airplane. Once it is off the ground, an airplane feels nothing but its own speed through the air. It makes absolutely no difference what its speed happens to be in relation to the ground. The aircraft in flight feels no wind. It simply proceeds, operating with the same mechanical efficiency, upwind, downwind, cross wind, or in no wind at all. (Note: Turbulence, gusts, or wind shears can lead to stalls even though airspeed is being maintained above stalling speed. In such conditions it is wise to add a safe margin to normal climbout or approach speeds.)

Based on the performance of many applicants on the Private Pilot Written Examination, here are some of the other more common misconceptions.

IF IT IS NECESSARY TO CLEAR OBSTRUCTIONS IMMEDIATELY AFTER TAKEOFF, SHOULD YOU USE BEST ANGLE-OF-CLIMB SPEED OR BEST RATE-OF-CLIMB SPEED? **Best angle-of-climb speed.** Simply stated, the difference is this. The best angle-of-climb speed produces the greatest climb in a given distance; the best

rate-of-climb speed produces the greatest climb in a given time. Distance, of course, is the determing factor for takeoff obstruction clearance.

DO ALL WIND REPORTS INDICATE A TRUE DIRECTION? **No.** The wind direction, as reported by a control tower in pilot instructions, is magnetic. All other wind directions (Sequence Reports, Terminal Forecasts, Winds Aloft Forecasts, etc.) are true.

WHAT IS THE HEIGHT OF A CLOUD CEILING BASED ON? **The height of the clouds ABOVE the ground, NOT the height above sea level (MSL):** For example, let's examine the following weather report: ABQ M30(+). The station is Albuquerque, N. M., which has an elevation of 5,352 feet above sea level. The ceiling is reported as a 3,000 foot overcast. Using the current Albuquerque altimeter setting, your altimeter would indicate approximately 8,352 feet at the base of the clouds when over the airport, but your height above the ground would be **3,000 feet.** As a word of caution, the 10,000-foot-plus mountains a few miles east of the city would probably extend up into the clouds since this ceiling report is based on an observation taken over the airport.

WHICH IS THE MORE DENSE—MOIST AIR OR DRY AIR? **Dry air.** It is generally understood that high temperatures and high elevations result in a higher density altitude, but there seems to be a general impression that moist air has the reverse effect. The common misconception is that moist air is heavier than dry air. This is not true! A given parcel of air will hold more dry air particles than water vapor particles. The dry parcel is therefore **denser** and **heavier** than the moist parcel. Since both engine and aircraft performance decrease with an increase in density altitude, you should remember that high relative humidities (small spreads between temperature and dew point), especially on hot summer days, will result in longer takeoff runs.

IS AN AIRCRAFT CRUISING VFR AT 5,500 FEET MSL ALWAYS GOVERNED BY THE VFR CRUISING ALTITUDES REQUIREMENTS (HEMISPHERICAL RULE)? **Not necessarily.** The rule pertains to aircraft operated in level cruising flight at 3,000 feet or more **above the surface.** The aircraft in this case might be operating above a surface of 3,500 feet. The hemispherical rule would not apply.

A CASE IN POINT

By Kenneth D. Beyer
Commission Attorney

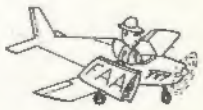
FAILURE TO ALLOW FOR DOWNDRAFTS ON THE LEEWARD SIDE OF A RIDGE WHICH COULD OR SHOULD HAVE BEEN EXPECTED AMOUNTS TO CARELESS OR RECKLESS OPERATION.

Pilot, flying a J-3 Cub with an overdue annual, was attempting to show passenger the feasibility of using airplanes for power line patrols. Pilot failed to check the weather, but if he had done so would have found that high winds and turbulence were to be expected. On approaching the leeward side of a 9000 foot ridge, Pilot encountered turbulence and downdrafts. The next successive ridge was an 8000 foot ridge. As Pilot was approaching the top, the aircraft lost altitude, and in turning away from the power lines on the right, the airplane struck a tree and was demolished.

The initial decision found Pilot guilty of a violation of sections 43.22 (a)(1), 60.11, and 60.12. Pilot appealed from the order of suspension and contested only the latter charge. Section 60.12 provides: **"Careless or Reckless Operation.** No person shall operate an aircraft in a careless or reckless manner so as to endanger the life or property of others." The Board stated that if a violation of the section were correct, that it had to rest upon two facts (1) That at the point the plane encountered the downdraft, Pilot was flying at an insufficient height to allow for the downdraft and to overcome its effects so as to clear the ridge, and (2) that the downdraft was such as was, or could have been, anticipated by Pilot. The Board found that the fact the craft did not clear the ridge despite Pilot's best efforts establishes the fact that he was flying at an insufficient altitude to allow for the effect of the downdraft.

Had pilot checked the weather, he would have been forwarned, and the fact that he encountered a downdraft on the previous ridge should have given him additional warning. Pilot admitted that Westerlies would normally result in downdrafts on the leeward side of the mountains showing that he could have been prepared if he had checked the weather. Accordingly, the Board found that the accident was the result of a weather phenomenon which was to be expected by a reasonably prudent pilot along the path which the respondent flew under the weather conditions prevailing on the day in question. The Board found thus that the violation had been proved.

Pilot also argued that the passenger had assumed the risk of a crash when he boarded the plane. The Board held that there was evidence to contradict the issue of whether the Passenger had in fact assumed the risk, but held that it was immaterial because the doctrine of assumption of risk did not apply in any event in a case involving a violation of section 60.12.



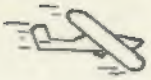
FEDERAL AVIATION AGENCY LISTING

Airport	Mar.	Apr.	May	Jun
Bozeman (Gallatin Field)	12	16	14	1
Culbertson		8		3
Glasgow	18		13	
Glendive	4			10
Great Falls (International)	5	9	7	4
Havre (City-County)		7		
Lewistown	25		27	
Miles City		22		
Missoula (Missoula County)	19	23	21	18
Sidney (Richland County)			6	

WATCH FOR THIS BOOK!

"To A Pilot." Duane Cole of the famous Cole Brothers Air show has recently completed a book dedicated to his son Rolly who was tragically killed in August of 1963, and featuring the many phases of their lives in aviation. Consisting of approximately 22,000 words and 150 pictures, Duane's book is a word picture of an air show family and its flying friends. The last phase of the book is devoted to the 24 years of his son's life.

The first 1,000 copies will be autographed and mailed from the Cole home in Fort Wayne, Indiana, the balance will be distributed by Publisher Ken Cook from Milwaukee. Price will be $5.00.



CALENDAR

March 2-11—Great Falls—Flight Instructor Refresher Course.

March 7 — Spokane, Washington — Board of Directors—INAC.

March 10-11 — Washington, D. C. — Winter Board Meeting of NASAO.

March 10-11 — Helena — Commission Meeting.

March 17—Pendleton, Oregon—Four State Directors Meeting.

March 22 — Helena — Return of the KLM Royal Dutch Airlines Flight from Europe with Helena Ski Club Members. MAC's Hangar No. 1 will be used for Customs Clearance.

May 1, 2 and 3—Billings—Montana Pilot's Association Annual Convention. "Montana Centennial" will be the theme. Mark this date on your calendar and make your plans to attend.

May 14, 15 and 16—Bozeman—National Intercollegiate Flying Association Meet.

June 5 and 6—Minneapolis, Minnesota—Minneapolis Fly-In—Centennial Fly-In for the two baseball games of the **Boston Red Sox and Minneapolis Twins.** "Chance of a Lifetime!" **Answer your questionnaire early!**

August 1 and 2—Moose Creek Ranch —Tentative plans are being made for a 3-state Fly-In at the Moose Creek Dude Ranch, 35 miles west of Hamilton, Montana. Oregon, Washington and Montana Pilots Associations are firming up their plans for a Barbeque and Campout that should be a family **must** for this summer. Idaho pilots will be extended an invitation to participate. **Watch for further details!!**

September — Helena — **INAC** — Annual Convention.

October 19, 20 and 21—Norman, Oklahoma—The National Airports Conference held at the University of Oklahoma. Under the joint sponsorship of the University and the American Association of Airport Executives, this conference has become an annual, working conference of national stature and persons in all segments of the Aviation Industry should endeavor to participate.

STILL LEARNING TO FLY!

"Has it occurred to you that you'll never stop learning to fly until you stop flying?

"New equipment comes out. A few things are different. You've really got to learn how to use it, start it, fly it, and get the feel of it. Gauges likely will be relocated, so you'll have to train yourself to look for them in a new spot.

"New airways are established and old landmarks disappear. You have to keep yourself familiar with new routes, landmarks, and layouts of runways and exits.

"New regulations appear and usually apply to you. You've got to keep up on these regs, or you'll learn about them the hard way.

"A good flier is a constant student of flying. He is always learning from his own experiences, from various kinds of instruction, and from the experiences of others.

"His cargo can change as the years pass by—and the requirements for handling it change, too. For example, only a few years ago Army Aviators hauled very few passengers. Now, they haul up to 32 troops—and new sets of hazards and safeguards must be handled.

"So, good flying is a continuous process of learning. When an aviator stops learning to fly, he is apt to stop living!

"Trouble is, some don't realize when we're going to school in this flying business. Our classroom isn't like the schoolrooms of our childhood. It is usually our aircraft, or it could be the ready room, or a meeting room. It may be something you read in the paper, the Digest, or on the bulletin board. It may be the printed instructions on the side of a Mohawk. It might be right now!

"A good many of us took dancing lessons when we were kids. But dance music and dance steps change. It's pretty hard to waltz to rock-and-roll. If you haven't kept up your dancing, you're in trouble.

"Same thing's true of flying. The music has changed. So has the dance floor! We go faster, further, and we have less time to 'pick up the beat' if we get out of step while flying.

"We each learned to fly one way or another. But fliers today simply can't get along with yesterday's method. They have to know quite a bit about their aircraft, FAA regulations and the laws of nature. They have to understand records and manifests, keep logs, and sometimes handle and account for moneys. They review accidents and try to figure how they would cope with the same problems.

"Don't get the mistaken idea that you are your own teacher in this business of flying.

"Every time you had to explain a mistake, you likely learned something. Every time you had a real near-miss, you should have learned something.

"In a sense, flying is like soldiering. You never stop learning and training for the big showdown. Equipment and tactics may change, but training goes on, adapted to the times.

"Training is up to you. A great deal of literature is available to add to your store of flying savvy. Most read the literature carefully, seeking all possible knowledge to improve themselves. A few may stick the material in the nearest waste basket, certain that you can't teach an old dog new tricks.

"No one can make you learn; you can only be offered the opportunity to learn. Some of you will grab every chance to learn, knowing that someday it might help save a life. Others will turn aside and learn little along the way. The type of pilot you are is directly related to your propensity to learn. We can offer pilots an opportunity to learn, but we can't make them learn. This is up to them. But one thing is sure—when you are too old to learn, you are too old to fly."

(Reprint from the United States Army Aviation Digest, adapted from a safety lecture by Donald S. Buck, Director of Safety, Headquarters, U. S. Continental Army Command, Fort Monroe, Va.)

FAIR ENOUGH — A wise judge, noted for his modern views was sentencing a defendant.

"I'm going to give you the maximum punishment," he said. "I'm not going to put you in our nice, comfortable jail. I'm going to let you go free and worry about taxes, politics, strikes, high prices and atom bombs —just like the rest of us."

DO follow regularly traversed routes through mountains or over unfavorable terrain.

AIRPORT VISITORS

General May and Lt. Col. Welch

Major General James A. May, flew to Helena in a Nevada Air Guard RB-57, to attend the funeral services for General Mitchell. Lt. Colonel Gustave L. Welch was pilot of the twin jet aircraft.

CONGRATULATIONS!

CERTIFICATES ISSUED RECENTLY TO MONTANA FLYERS

Nickel, Herbert Reuben—Washington—Student
Hawks, Curtis Robert—Culbertson—Student
Douglas, Jimmy Leonard—Wyoming—Student
Johnson, Willard Douglas—Billings—Student
Evedt, Conrad R.—Glasgow—Comm.
Thompson, J. C.—Billings—MEL Center Thrust
Nelles, Ralph Cyril—Billings—Instrument
Pickens, James, Jr.—Billings—Instr. on Comm.
Michels, Donald Hubert—Beach, N. D.—Student
Stoner, Vernorn Ray—Outlook—Student
Weast, Vernon Edward—Red Lodge—Private
Craig, Thomas William—Billings—Private
Ludwick, John L.—Baker—Student
House, Duane Lee—Billings—Student
Hammerstrom, Roger K.—Billings—Student
Almond, James Richard—Hysham—Student
Zerbe, Paul—Lustre—Student
Davis, Paul Keith—Greybull, Wyoming—Flight Instr.
Meeker, Robert S.—Greybull, Wyoming—Student
Jones, Darrell Keith—Glendive—Student
Potter, Carl Ezra—Lewistown—Student
Kellogg, Robert J.—Glendive—Student
Nelson, Richard Arlen—N. Dakota—Private
Pederson, Jerome David—Wolf Point—Student
Eliason, Carl Daniel—S. Dakota—Student
Ward, Burt L.—Laurel—Student
Wismeyer, Edwin M.—Billings—Private
Elliot, Ian A.—Miles City—Private
Gillespie, Frank Albert—Billings—Student
Parker, Donald Edwin—Winifred—Private
Finkel, Joseph N.—Dillon—Student
Krezelak, Phillip A.—Havre—Student
Price, Burdena J.—Great Falls—Student
Babcock, Everett R.—Helena—Student
Hawkinson, Donald W.—Anaconda—Student
Anderson, Bruce G.—Anaconda—Student
McCann, Paul G.—Vaughn—Private ASEL
Stilkey, Richard E.—Cut Bank—Student
Atlas, Courtney B.—Helena—Student
Farrar, James Clinton—Shelby—Student
Goettle, Milford J.—Helena—Student
Lohof, Robert H.—Great Falls—Instr. added to Flt. Instru.
Perdue, Frederick V.—Great Falls—Student
Blackburn, Loye E.—Great Falls—Private ASEL
Osburn, Donald I.—Great Falls—Private ASEL
Darnell, Mervin G.—Savage—Student
Collett, Malcolm J.—Whitehall—Student
Erickson, Ronald Garrison—Student
Clark, Robert C.—Havre—Private ASEL
Stewart, Bobby G.—Chinook—Student
Knickerbocker, Robert L.—Shelby—Student
Robinson, John B.—Great Falls—Student
Meras, Peter K.—Great Falls—Student
Williams, Norman—Belgrade—Student
Granger, Eddie M.—Helena—Rotorcraft—Helicopter added to Comm. ASEL and Instru., (Mil. Comp.)
Fitzgerald, Ronald E.—Brady—Student
Kruger, James W.—Cut Bank—Flt. Instr. Helicopter added to Flt. Instr. airplanes
Benjamin, Norman W.—Devon—Comm. ASEL
Doyle, Ethel L.—Turner—Student
Baltrusch, James L.—Havre—Private ASEL
McMickin, Johnny R.—Great Falls—Private ASEL
Cloninger, David R.—Missoula—Private ASEL
Hertler, Charles W.—Missoula—Private ASEL
Courtnage, Donald R.—Big Sandy—Private ASEL
Davis, Lawrence P.—Havre—Student
Clare, Donald T.—Bozeman—Student
Johnson, Rhoda J.—Malta—Student
Hansen, Ermal Henry—Fort Benton—Comm. ASEL
Bitz, Leo G.—Big Sandy—Comm. ASEL
Brisbin, Michael W.—Three Forks—Student
Keck, Donald J.—Great Falls—Student
Stanley, Jack E.—Great Falls—Student
Engle, Donald M.—Twin Bridges—Student
Tice, Edward M., Great Falls—Student
Brown, Kenneth C.—Great Falls—Student
Horton, Robert L.—Great Falls—Student
Arndt, Kenneth V.—Chinook—Student
Booker, Jerry E.—Butte—Student
Martin, Wilbur V.—Missoula—Student
Kidd, Mary C.—Great Falls—Student
Newcomb, Thomas P., Jr.—Student
McCord, John H.—Havre—Student
Pearson, Allan L.—Big Sandy—Private ASEL
Kvande, Trygve M.—Havre—Student
Johnson—Kalispell—Student
Seideman, Darrell R.—Butte—Student
Durkin, James F.—Great Falls—Private ASEL
Stensrud, Merlin A.—Missoula—Private ASEL
Henderson, Wm. W.—California—Private

Jones, David J.—Hardin—Private ASEL
Skabo, Paul S.—Minot, N. Dak.—Private ASEL
Johnson, John—Plentywood—Private ASEL
Endsley, Harry—Bigfork—Private ASEL
Peterson, Thomas C.—Pray—Student
Rickman, Ezra G., Helena—ASEL added to Com. AMEL
Guinan, Donald W., Malta—Private
Groff, Sidney Lavern, Butte—Private
Metully, Joe M., Twin Bridges—Powerplant Mechanic
Patzer, Ronald L., Helena—Airframe Mechanic
Durkin, James F., Great Falls—Student
Blackburn, Loye E., Great Falls—Student
Lorz, Larry L., Helena—Powerplant Mechanic
Darcy, James L., Helena—Powerplant Mechanic
Christ-Janer, Edward P., Great Falls—Student
Mayes, James E., Missoula—Student
Hoglund, Wm. S., Great Falls—Private AMEL
Stalnaker, Lawrence C., Kalispell—Student
Ecton, Patricia J., Manhattan—Student

FIRST KNOWN AIRPLANE FLIGHT MANUAL

Instructions Issued with the 1911 Glen Curtiss "Pusher" Rules Governing the Use of Aeronautical Apparatus

1) The aeronaut should seat himself in the apparatus, and secure himself firmly to the chair by means of the strap provided. On the attendant crying "Contact" the aeronaut should close the switch which supplies electrical current to the motor, thus enabling the attendant to set the same in motion.

2) Opening the control valve of the motor, the aeronaut should at the same time firmly grasp the vertical stick or control pole which is to be found directly before the chair. The power from the motor will cause the device to roll gently forward, and the aeronaut should govern its direction of motion by use of the rudder bars.

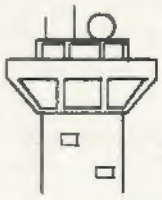
3) When the mechanism is facing into the wind, the aeronaut should open the control valve of the motor to its fullest extent, at the same time pulling the control pole gently toward his (the aeronaut's) middle anatomy.

4) When sufficient speed has been attained the device will leave the ground and assume the position of aeronautical ascent.

5) Should the aeronaut decide to return to terra firma, he should close the control valve of the motor. This will cause the apparatus to assume what is known as the "gliding position," except in the case of those flying machines which are inherently unstable. These latter will assume the position known as "involuntary spin" and will return to earth without further action on the part of the aeronaut.

6) On approaching closely to the chosen field or terrain, the aeronaut should move the control pole gently toward himself, thus causing the mechanism to alight more or less gently on terra firma.

(From the FAA Academy Eng. and Mfg. Branch.)



TOWER OPERATIONS

MONTANA TOWER-CONTROLLED AIRPORT OPERATIONS

JANUARY 1964

	Total Operations	Instrument Operations
Billings	7486	598
Great Falls	6383	772
Missoula	2363	279
Helena	1808	149

"A SAFETY ALERT"

AIRFRAME ICING

In-flight accumulation of ice on the wings and tail surfaces changes the airflow over these surfaces, thereby reducing the available lift, while increasing the load the wing has to carry. These combined factors create a condition which may result in a partial or complete loss of control.

REMEMBER

Known icing conditions should be avoided whenever possible unless adequate deicing equipment is available.

CAB

Experience is something that you have when you're too old for the job.

UNICOM RADIO PROGRAM

Unicom On 122.8

Alzada	Fairfield	Jackson
Anaconda	Fort Benton	Jordan
Babb	Gallatin Gateway (Nine Quarter Circle Ranch)	Kalispell
Big Timber (Private)		Lewistown
Bozeman		Libby
Bridger		Plentywood
Butte		Polson
Chester	Geraldine	Poplar
Chinook	Glasgow	Red Lodge
Choteau	Glendive	Roundup
Columbus	Hamilton	Scobey
Condon	Hardin (Private)	Shelby
Conrad	Harlowton (Private)	Superior
Culbertson	Havre	Sweetgrass-Coutts
Cut Bank	Havre (Sands, Private)	West Poplar
Dell		West Yellowstone
East Poplar		Wolf Point
Ethridge		Valier

Unicom On 123.0

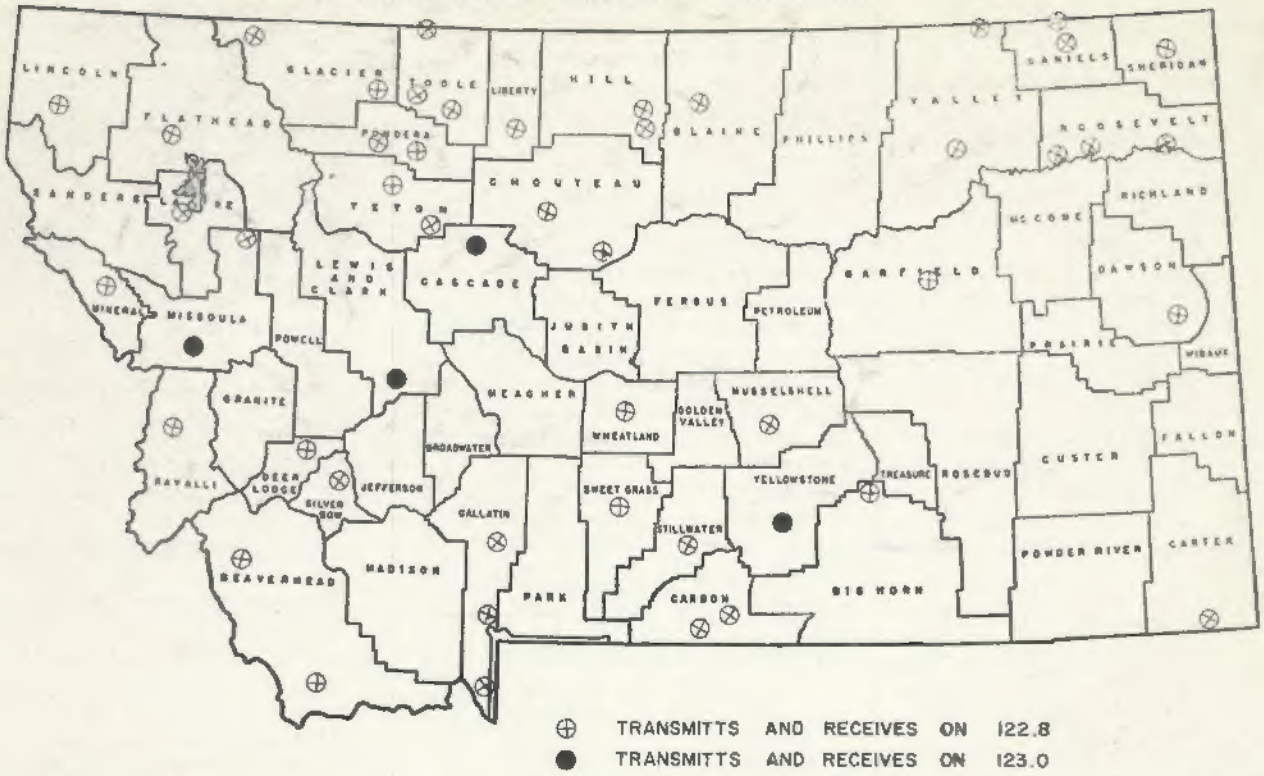
Billings (Private)	Helena	Great Falls (Private)
	Missoula	

The Montana Aeronautics Commission has two-way air to ground radio units to be installed on Montana airports. Unicom Radios are keyed to operate on a frequency of 122.8 megacycles or 123.0 megacycles. Their primary function is for the purpose of airport advisory information on those airports not serviced by the FAA Towers or Flight Service Stations. Their service is also provided for the purpose of Search and Rescue, and Civil Defense operations. The Commission pays one-half of the cost of the radio, accessories, and installation, with the sponsor paying the other half. There are no additional fees to the sponsor as the Commission provides all maintenance.

Several cities without a full time flight operator, have their Unicoms located in with downtown business houses. A number of these businessmen have asked that the general flying public, when making use of this service, speak clearly and slowly; and repeat the transmission several times at 2 or 3 minute intervals if an immediate response is not received. Occasionally the Unicom operator is in some other part of their building or on the telephone and are unable to answer an aircraft on the first call. Lets give the operators a chance to fulfill the service that they have accepted.

If after several attempts, a city listed as having a Unicom cannot be reached during normal daylight hours, please notify the MAC office. This will aid the Commission in restoring this service as soon as possible. Under our Unicom exchange program a ground station may be without service for a week to 10 days before a new set is in operation.

UNICOM RADIO PROGRAM



⊕ TRANSMITTS AND RECEIVES ON 122.8

● TRANSMITTS AND RECEIVES ON 123.0

MEMBER
NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS

PURPOSE:—**"To foster aviation as an industry, as a** mode of transportation for persons and property and as an arm of the national defense; to join with the Federal Government and other groups in **research, development,** and **advancement of aviation;** to develop uniform aviation laws and regulations; and to otherwise encourage co-operation and mutual aid among the several states."

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